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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,772	09/17/2003	Volker Braun	Q77079	2953

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EXAMINER	
WIN, AUNG T	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/663,772	BRAUN ET AL.	
	Examiner	Art Unit	
	Aung T. Win	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 09/04/2007 have been fully considered but they are not persuasive. Applicant argues that Hedberg fails to teach sending one of the first signals to noe of the plurality of user equipments on one of the dedicated channels on a carrier frequency by applying transmit diversity along with one of the second signals on the code-multiplexed shared channel on the carrier frequency by applying multi-user diversity through the assigned antenna as recited by claim 1. Applicant further stated Hiramatsu does not cure the deficiency.

Examiner disagrees. As rejection stated below Hedberg teaches applying transmit diversity although Hedberg does not explicitly disclose although control signal transmitted over dedicated control channel DPCH (i.e., first signal: see rejection below) being transmitted by applying transmit diversity. Hiramatsu teaches applying transmit diversity on signals transmitted over dedicated control channel DPCH (see citations stated in rejection below). Therefore, the method and device as modified with Hedberg in view of Hiramatsu would teach the method, device, and system as claimed in Claims 1, 6, 7 & 10.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim 6 claims "computer program" which appears to examiner that the non-statutory subject matter "program" is being claimed.

It appears that Claims 48 - 58 claim the non-statutory subject matter of a computer program. Data structures not claimed as "**A computer readable recording medium for storing a computer program being executed by computer"** are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1754 (claim to a data structure per se held nonstatutory). Therefore, since the claimed programs are not tangibly embodied in a physical medium, encoded on a computer-readable medium and clearly recited as a "computer program" then the Applicants has not complied with 35 U.S.C 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 6-8, 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art: "Evolving WCDMA" by Hedberg et al (hereinafter Hedberg) in view of IEEE published prior art: "Transmit Diversity applied on the CDMA/TDD cellular system" by Hiramatsu et al. (hereinafter Hiramatsu).

2.1 Regarding Claims 1 & 2, Hedberg discloses a HSDPA system and method of sending first and second signals to a plurality of user equipments, the method comprising the steps of:

Providing a dedicated channel for each one of the plurality of user equipments [associated dedicated control channel DPCH: See General channel structure on Page 129];

Providing a code-multiplexed shared channel for the plurality of user equipments [High Speech Downlink Shared Channel (HS_DSCH) shared among users by assigning codes to each user: HSDPA: Page 128-129];

Sending first signal (associated dedicated control channel DPCH to one of the plurality of user equipments on one of the dedicated channels (i.e., DPCHs) on a carrier frequency along with one of the second signals to one of the plurality of user

equipments on the code-multiplexed shared channel on the carrier frequency by applying multi-user diversity through the assigned antenna [sending high speed packet data to the users on code-multiplexed HS_DSCH shared channel on the carrier frequency by applying multi-user diversity: See HSDPA-Improved support for best-effort services on Page 128-129] [every UE to which data can be transmitted on the HS-DSCH has an associated dedicated physical channel DPCH: Page 129];

Assigning an antenna of a set of antennas to each one of the plurality of user equipments [Figure 4, Architecture of the radio base station with multiple antennas used for dedicated users and shared users].

Hedberg also teaches applying transmit diversity in downlink for improving coverage and capacity [Advanced antenna solutions: Page 127] [Open-loop transmit diversity: Page 126]. Therefore it is obvious to one of ordinary skill in the art that base station antennas in the disclosed system would have been configured for both transmit diversity and multi-user diversity transmission method although Hedberg does not explicitly teach applying transmit diversity in sending first signal to user equipment on the dedicated channel as claimed. Moreover, it should be noted that techniques and advantages of applying transmit diversity in the wireless system such as open-loop or closed-loop transmit diversity and multi-user diversity are well known to skill in the art at the time of invention of made. Hiramatsu teaches open-loop transmit diversity applied to DPCH [Dedicated Physical Channel DPCH and Figure 6 on Page 1171].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention of made to apply transmit diversity on DPCH as taught by Hiramatsu to

modify Hedberg's system as claimed i.e., applying multi-user diversity and transmit diversity by assigning the antennas accordingly. One of ordinary skill in the art would have been motivated to do this to enhance the capacity, coverage and reliability of the wireless system.

2.2 Claim 6 is rejected for the same reason as stated above in Claim 1 rejection because claimed executable steps substantially read on the corresponding steps of Claim 1. It is obvious to one skill in the art that modified system must have claimed computer program for executing the claimed steps because the system applying modified method is computer based system.

2.3 Claims 7 & 8 are rejected for the same reason as stated above in Claim 1 rejection because claimed steps substantially reads on the corresponding steps of Claim 1. Modified system discloses base station (claimed sender) for sending of first and second signals to a plurality of user equipments. It is obvious to one of ordinary skill in the art that modified base station must have claimed components and scheduler in order to execute corresponding claimed steps because the base station as modified is configured to transmit downlink signals to serving users on corresponding assigned channels applying transmit diversity and multi-users diversity as stated above in Claim 1.

2.4 Claim 10 is also rejected for the same reason as stated above in Claim 1 rejection because claimed steps executed by system substantially reads on the corresponding method steps of Claim 1. It is obvious that wireless system operating with modified method for sending of first and second signals to a plurality of user equipments, wherein the system would comprises multiple base stations (claimed components) configured to transmit downlink signals to serving users on corresponding assigned channels applying transmit diversity and multi-users diversity as stated above in Claim 1.

2.5 Claim 11 is also rejected for the same reason as stated above in Claim 1 rejection. It is obvious that the method as modified would simultaneously communicate with users on assigned channels as claimed in Claim 11. Claimed concept of simultaneously communicating with users is well known to one skill in the art at the time of invention of made.

3. Claims 3, 4, 5 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art: "Evolving WCDMA" by Hedberg et al (hereinafter Hedberg) in view of IEEE published prior art: "Transmit Diversity applied on the CDMA/TDD cellular system" by Hiramatsu et al. (hereinafter Hiramatsu), further in view of Dahlman et al. (US20020145988A1).

3.1 Regarding Claims 3 & 9, modified system as stated above teaches as claimed in claim 1 and does not explicitly disclose assigning carrier frequency to the dedicated and shared channels. It is obvious to one of ordinary skill in the art that dedicated and shared channels must be assigned with carrier frequency because they are communication channels.

Dahlman also teaches assigning carrier frequency from a set of available carrier frequencies [0037]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention of made to assign the carrier frequency to dedicated and shared channels from a set of carrier frequencies as taught by Dahlman frequency assigned method to modify as claimed. One of ordinary skill in the art at the time of invention of made to do this to optimize the communication network.

3.2 Claim 4 is rejected for the same reason as stated above in Claim 3 rejection. Hedberg also teaches transmitting high speed data using dedicated channels [dedicated channel is suitable for users close to cell borders: page 127] and also teaches using transmit diversity for slow moving user equipment [open-loop transmit diversity: Page 126]. Therefore, it would have been obvious that modified method is also configured to apply transmit diversity to send second signal to users as claimed.

3.3 Regarding Claim 5, modified method also teach closed loop transmit diversity i.e., best antenna is selected for transmission based on channel condition information

received by each antenna in uplink slot [Hiramatsu: See Selective Transmit Diversity on Page 1171]. At the time of invention of made, the concept and advantage of applying closed loop diversity in the wireless system is also well known to one of ordinary skill in the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3GPP TS 25.308 v5.2.0 (2002-03)

3GPP TS 25.211 v3.7.0 (2001-06)

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung T. Win whose telephone number is (571) 272-7549. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aung T. Win
Group Art Unit 2617
November 26, 2007

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